REMARKS

This communication is a full and timely response to the aforementioned final Office Action dated March 18, 2008. Claims 1-9, as presented in the Amendment filed on February 4, 2008, are not amended and remain in the application. Thus, claims 1-9 are pending in the application.

Reconsideration of the application and withdrawal of the rejections of the claims are respectfully requested in view of the foregoing amendments and the following remarks.

I. Amendments to the Specification

The original drawings of the present application filed on July 19, 2003 contained Figures 7C and 7D. A Notice to File Corrected Application Papers was mailed on October 21, 2003. The Notice indicated that the original drawings were objected to for having incorrect margins. Replacement formal drawings were then filed in the present application on November 20, 2003.

The replacement drawings filed on November 20, 2003 combined Figures 7C and 7D into Figure 7C. Consequently, Figure 7D no longer exists in the present application because the illustration of Figure 7D was included with Figure 7C. However, the original specification contains references to Figure 7D. Accordingly, the specification has been amended to remove any references to Figure 7D, since Figure 7D has been combined with Figure 7C in the replacement drawings filed on November 20, 2003.

Approval and entry of the amendments to the specification are respectfully requested.

III. 35 U.S.C. § 102 Rejections

Claims 1-3 and 6 were rejected under 35 U.S.C. § 102(b) as being anticipated by Bonneau et al. (U.S. 6,002,794, hereinafter "Bonneau"). This rejection is respectfully traversed for the following reasons.

Applicants respectfully submit that Bonneau does not disclose or suggest all the recited features of claim 1. In particular, Applicants respectfully submit that Bonneau does not disclose or suggest processing an image at a second resolution

to identify an object in the image at the second resolution, and processing the image using the object identified in the image at the second resolution to identify another object, as recited in claim 1, for at least the following reasons.

Claim 1 recites a method for identifying objects in an image. The method of claim 1 comprises receiving an image with a first resolution. The method of claim 1 also comprises processing the image at a second resolution to identify an object in the image at the second resolution. The method of claim 1 also comprises processing the image at the first resolution using the identified object to identify another object. Claim 1 recites that the first resolution is higher than the second resolution.

Accordingly, claim 1 recites that the image is processed at a second resolution to identify an object in the image at the second resolution. The image is also processed at the first resolution using the object identified in the image at the second resolution to identify another object.

The Office alleged that the features of claim 1 are disclosed in Figure 13 of Bonneau. Applicants respectfully submit that Bonneau does not disclose or suggest the feature of processing an image at a second resolution to identify an object in the image at the second resolution, and processing the image using the object identified in the image at the second resolution to identify another object, as recited in claim 1.

Bonneau discloses an encoding technique for processing an original unencoded signal that is to be encoded and compressed. With reference to Figure 13, Bonneau discloses that an image 1301 is divided and processed according to three different resolutions (scales). Scale one, which has the highest resolution, corresponds to image 1307. Scale two, which is lower than the resolution at image 1307, corresponds to image 1305. Scale three, which is the lowest resolution, corresponds to image 1303 (see Column 21, lines 29-38). Images 1307, 1305 and 1303 are processed independently at their respective resolutions to perform edge recognition at the various resolutions.

The shape recognition technique illustrated in Figure 13 of Bonneau is utilized in conjunction with the pattern recognition process illustrated in Figure 10. The process of Figure 10 is utilized for pattern recognition based on chain coded blocks. The chain coded blocks identify the outside edges of separate objects (see Column

18, lines 36-43). Step 1005 of Figure 10 matches image points across various scales using the Holder exponent h from equation (13) to eliminate noise for an object. In step 1007 of Figure 10, Bonneau discloses that an object with a Holder exponent h of a predetermined value is preserved, while image parts having a Holder exponent h less than the predetermined value are not preserved (see Column 25-49). Accordingly, Bonneau discloses that an image part with a predetermined Holder exponent value is compared against a stored image so that only clearly defined edges are preserved.

The Office asserted that this disclosure of Bonneau corresponds to the recited feature of claim 1 of processing the image at the first image using the object identified at the second resolution to identify another object. This assertion is not supportable for the following reasons.

Bonneau does not disclose or suggest that the comparison of chain coded edges for one object among different resolutions is performed to identify another object. On the contrary, Bonneau discloses that an edge of one object of a first resolution (image 1313) can be compared with an edge of the same object of a second resolution (image 1311) to determine whether there is in fact an edge having a Holder exponent h of the predetermined value. In particular, Bonneau discloses that when the edge blocks are chain coded, the blocks which do not contain edges or have a small modules value are eliminated because only edges over a specified threshold are chain coded (see Column 21, lines 38-42). This disclosure pertains to step 1007 in Figure 10. Thus, image 1303 will be transformed into object 1309, image 1305 will be transformed into object 1311, and image 1307 is transformed into object 1313. The edges for one object (object 1) in images 1309, 1311 and 1313 will have chain coded blocks stored in object one portion 1323 of file 1321, and the edges for another object (object 2) will have chain coded blocks stored in object two portion 1325 of file 1321. These chain coded blocks stored at the various resolutions are then comparable to determine whether an edge at one of the resolutions can be confirmed against the same edge at a higher resolution (see Column 21, lines 53-61).

Accordingly, the arrow intersecting images 1309, 1311 and 1313 indicates that an edge for one object at each of the three resolutions is stored in association

with each other in the compressed data file 1321, and an edge of another object at each of the three resolutions is stored in association with each other in the compressed data file 1321. The respective edge values can then be compared to determine whether the edge values at the various resolutions correspond to known values.

The Office has incorrectly asserted that the storage of edge values at the various resolutions is used to identify another object. In particular, the Office asserted that "identified object 1311 at second resolution is used to identify those features of higher resolution (e.g., mouth) using items 1005, 1007, 1009 of fig. 10 (i.e. matching features across scales, including matching the identified object item 1311 at second resolution to see consistency with another object at the first resolution) to identify another object (the mouth and hair in item 1319 of fig. 13)." This assertion is not supportable.

First, the matching of edges at the various resolutions in items 1309, 1311 and 1313 does not have any relation to identifying another object. On the contrary, the matching of edges is performed to determine whether an edge of one object in image 1309 matches an edge of the same object in image 1311, and/or matches an edge of the same object in image 1313. The determination of edge consistency for any object does not have any relation to identifying another object at a higher resolution.

Second, the edge detection values stored in compressed data file 1321 are unique to one object, i.e. object 1 1323 and object 2 1325. The edge detection values are stored and compared to determine whether a detected edge in one resolution is consistent with a detected edge at another resolution. This detection process has no relationship with identifying another object. On the contrary, another object will have separate edge detection values, as evidenced by the separate values stored in the compressed data file 1321 for each object. These stored values of one object do not have any relationship to and are not used for identifying another object within the image.

In particular, Bonneau does not disclose or suggest that the detected edge values stored in the compressed data file 1321 for the mouth in image 1301 (object 1) are used to identify another object, such as the hair in item 1319 (or item 1301).

On the contrary, the hair in item 1319 is detected independent of the edge block analysis performed at the second and third resolutions (scales), because the edge block analysis at the different resolutions pertains only to comparing whether the same edge is detected at the various resolutions. The detection or processing of another object (e.g., the hair in image 1301, 1319) is independent from the processing any object in images 1309, 1311.

Accordingly, contrary to the Office's assertion, Bonneau does not disclose or suggest processing an image at a second resolution to identify an object in the image at the second resolution, and processing the image using the object identified in the image at the second resolution to identify another object, as recited in claim 1. On the contrary, Bonneau discloses that different resolutions are used to determine whether the same object is detected at the different resolutions.

Therefore, Applicants respectfully submit that Bonneau does not disclose or suggest that an image is processed at a second resolution to identify an object at the second resolution, and the image is processed at the first resolution using the object identified in the image at the second resolution to identify another object, where the first resolution is higher than the second resolution, as recited in claim 1.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that Bonneau does not disclose or suggest all the recited features of claim 1.

Consequently, Applicants respectfully submit that claim 1 is patentable over Bonneau.

III. 35 U.S.C. § 103(a) Rejections

Dependent claims 4, 5 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bonneau in view of Hsu (U.S. 5,631,970). Further, dependent claims 8 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bonneau in view of Eppler (U.S. 6,084,989).

As demonstrated above, Bonneau does disclose or suggest all the recited features of claim 1. Namely, Bonneau does not disclose or suggest that an image is processed at a second resolution to identify an object in the image at the second resolution, and the image is processed at a first resolution using the identified object to obtain another object, as recited in claim 1.

Hsu and Eppler each fail to disclose or suggest this feature of claim 1. Consequently, Hsu and Eppler do not cure the deficiencies of Bonneau for failing to disclose or suggest all the recited features of claim 1.

Therefore, no obvious combination of Bonneau, Hsu and Eppler would result in the subject matter of claim 1, since Bonneau, Hsu and Eppler, either individually or in combination, do not disclose or suggest all the recited features of claim 1.

The foregoing explanation of the patentability of independent claim 1 is sufficiently clear such that it is believed that separately arguing the patentability of the dependent claims is unnecessary at this time. However, Applicants reserve the right to do so if it becomes appropriate.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that claim 1, as well as claims 2-9 which depend therefrom, are patentable over the applied references.

IV. Conclusion

In view of the foregoing remarks, it is respectfully submitted that the present application is clearly in condition for allowance. Accordingly, Applicants request a favorable examination and consideration of the instant application.

If, after reviewing this Response, the Examiner believes there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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